

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The Abstract, beginning at line 1 of page 30, has been amended as follows:

A ~~luminescent~~ semiconductor nanocrystal compound is described ~~which is~~ capable of linking to an affinity molecule. The compound comprises (1) a semiconductor nanocrystal capable of emitting electromagnetic radiation (~~luminescing~~) ~~in a narrow wavelength band~~ and/or absorbing energy, and/or scattering or diffracting electromagnetic radiation - when excited by an electromagnetic radiation source (~~of narrow or broad bandwidth~~) or a particle beam; and (2) at least one linking agent, having a first portion linked to the semiconductor nanocrystal and a second portion capable of linking to an affinity molecule. The ~~luminescent semiconductor nanocrystal~~ compound is linked to an affinity molecule to form ~~an organo-luminescent a~~ semiconductor nanocrystal probe capable of bonding with a detectable substance, ~~in a material being analyzed, and capable of emitting electromagnetic radiation in a narrow wavelength band and/or absorbing, scattering, or diffracting energy when excited by an electromagnetic radiation source (of narrow or broad bandwidth) or a particle beam. The probe is stable to repeated exposure to light in the presence of oxygen and/or other radicals.~~

~~Treatment of a material with the organo-luminescent semiconductor nanocrystal probe, and~~
~~Subsequent exposure of this treated material to excitation energy, to determine the presence of~~
~~the detectable substance within the material bonded to the probe, will excite the semiconductor~~
~~nanocrystal in the probe, bonded to the detectable substance, causing the emission of~~
~~electromagnetic radiation, of a narrow wavelength band and/or the detectable absorption, and/or~~
~~scattering or diffraction of energy signifying, in either case, the presence, in the material, of the~~
~~detectable substance bonded to the organo-luminescent semiconductor nanocrystal probe. Since~~

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~~the semiconductor nanocrystals in the probe are excitable over a broad bandwidth of energy, and emit electromagnetic radiation over a narrow bandwidth, it is possible to use a single energy source to simultaneously excite a plurality of such probes, each emitting electromagnetic radiation of a differing wavelength band to simultaneously analyze for a plurality of detectable substances in a material being analyzed.~~

Further described are processes for respectively: ~~is a process for making the luminescent semiconductor nanocrystal compound; and for making the organo-luminescent semiconductor nanocrystal probe; and comprising the luminescent semiconductor nanocrystal compound linked to an affinity molecule capable of bonding to a detectable substance. A process is also described for using the probe to determine the presence of a detectable substance in a material.~~